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(6) Person-Situation Effects
in the Prediction of Performance:
An Investigation of Ability, Self-Esteem, and
Reward Contingencies.

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Interactional psychology is concerned with the identification of situational characteristics that enhance the prediction of behavior from knowledge of individual characteristics. Ability, self-esteem, and reward contingencies were examined as predictors of individual effort and performance. Hypotheses were developed using the interactionist approach. Sixty people were hired to work for one week in a simulated organization. Although characteristics of

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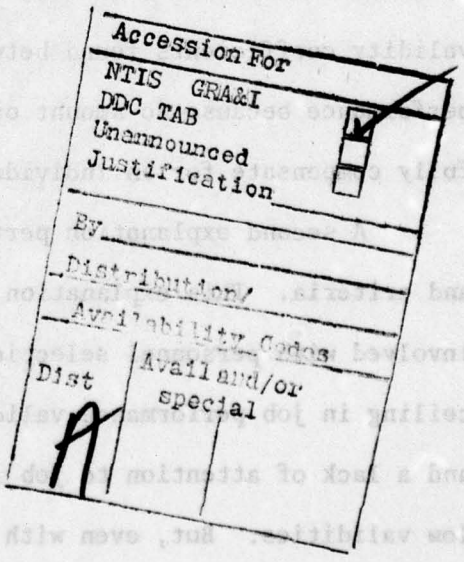
Abstract

Interactional psychology is concerned with the identification of situational characteristics that enhance the prediction and understanding of behavior from knowledge of individual differences. Ability, self-esteem, and reward contingencies were examined as predictors of individual effort and performance. Hypotheses were developed using the interactionist approach. Sixty people were hired to work for one week in a simulated organization. Although characteristics of both people and the situation influenced effort and performance, there was no evidence of differential validity. The need to consider situational and individual difference characteristics as independent predictors is discussed and examples of future research questions are presented. Past emphasis on maximization of prediction validities without regard to situational effects on levels of performance is criticized.



Person-Situation Effects in the Prediction of Performance: An Investigation of Ability, Self-Esteem, and Reward Contingencies

The identification and measurement of individual differences is a defining characteristic of psychology. But, in spite of past emphasis on individual differences, research suggests that the prediction of behavior from personality inventories rarely exceeds $\underline{r} = .30$ (cf., Bem and Allen, 1974) and the prediction of job performance from ability tests rarely exceeds $\underline{r} = .50$ (cf., Dunnette, 1966).

Several explanations have been offered to account for the existence of these validity ceilings. First, with regard to personality, Mischel (1968) has argued that behavior is primarily a function of cues and rewards in the situation and that general personality drives and dispositions do not exist. Given this radical "situationist" viewpoint, cross-situational consistencies in behavior and in the prediction of behavior from personality traits would not be expected to occur. This view does not, however, adequately explain the relatively low validity coefficients found between measures of job-related abilities and job performance because no amount of situational variation in cues and rewards can fully compensate for an individual's lack of potential to perform some task.

A second explanation pertains to problems in the measurement of predictors and criteria. This explanation has been pursued most thoroughly by psychologists involved with personnel selection and it does offer a potential reason for the ceiling in job performance validities. Unreliable measures, biased criteria, and a lack of attention to job relatedness are most often listed as sources of low validities. But, even with attention to these issues, a ceiling on reported validity coefficients remains.

Recently, a third explanation has been proposed by researchers involved with understanding personality-behavior relationships. This explanation simultaneously considers aspects of the person and the situation and has been called interactional psychology (cf., Ekehammar, 1974; Endler & Magnusson, 1976; Magnusson & Endler, 1977). Although this explanation is not new; for example, Lewin (1951) long ago emphasized that behavior was a function of the person and the environment and Forehand (1968) and Sells (1963) stressed people and situations in the context of behavior in organizations, the ideas have surfaced in the literature with renewed enthusiasm. Briefly summarized, situations vary in cues and constraints and people vary in cognitions, abilities and motivations. The behavior and performance of a particular person in a particular situation is a result of the joint characteristics of both. Consequently, descriptions of the situation and accurate measurement of individual differences are both important. Failure to find cross-situational reliability in behavior or in the prediction of behavior does not necessarily imply problems with measurement or the non-existence of personality/ability traits. Rather, it implies that the complex relationship, or interaction, between people and situations has not been fully described. Empirical work by Bem in the area of personality and behavior (Bem & Allen, 1974; Bem & Funder, 1978) and Locke in the area of ability and performance (Locke, Mento & Katcher, 1978) has been supportive of an interactionist view. In addition, Schneider (1978, Note 1) recently has discussed implications of this view on topics ranging from personnel selection to organizational effectiveness.

Before proceeding further, however, it may be useful to reflect on what is meant by a person-situation interaction. There are several meanings. Perhaps the most common interpretation is the statistical one as used with ANOVA. Here emphasis is placed on the non-additivity of effects. But, this interpretation

represents only in part the point made by interactionists and it may lead to unnecessary worry over ratio scales of measurement, order of testing for main effects and interactions, sample characteristics, strength of manipulations, and so forth. Because of these and other problems associated with finding statistically significant algebraic interaction terms (cf., Schneider, 1978), the interactionist view may be prematurely dismissed on non-substantive grounds. Caution is required, therefore, on the over reliance of algebraic interactions as the only interpretation of an interaction.

Olweus (1977) discusses other interpretations that better reflect the stance taken by interactionists. He lists three additional meanings. First, a person-situation interaction simply can mean that both variables influence behavior simultaneously. Failure to pay attention to other possible causal variables can provide a distorted view of the effects of personal characteristics or situational characteristics. An algebraic interaction does not have to occur. Rather, there may be many overlapping person and situation main effects. Second, the person and the situation may be interdependent in that the same situation is perceived differently by different people. Again, an algebraic interaction may not be found. Finally, interaction can refer to reciprocal influence. People act on and change situations just as situations act on and change people.

In summary, the meaning of an interaction is not limited to an algebraic effect of non-additivity, and the use of other meanings may be more beneficial in terms of improving our understanding and prediction of behavior and performance.

The purpose of this paper is to consider the interactionist viewpoint in the prediction of employee behavior and performance from knowledge of (1) individual differences in a job-related measure of ability; (2) individual differences in a job-related measure of personality; and (3) situational differences in performance-reward contingencies. Steps were taken to assure variability in people

and in situations, and reliable and valid measures of all predictors and criteria were obtained. The work of Dunnette (Note 2), Korman (1970), and Hechler and Wiener (1974) was used to develop hypotheses that reflect the interactionist position.

Beginning with Dunnette, he proposed that behavior potential, as measured by ability tests, is different from behavior volition, as measured by actual choice behavior and/or performance (Dunnette, Note 2). Even when constraints to behavior and performance are removed, knowledge of what a person can do or levels of performance that can be attained are not necessarily always going to predict what a person does do or levels of performance that are attained. This is where motivation concepts become important, because Dunnette believes that the primary effect of motivation is to enhance the expression of individual ability. Motivation research should be concerned with the identification of factors that facilitate the display of individual ability differences.

Research generally supports the assumption that behavior and performance will be affected by contingent reward systems (cf., Campbell & Pritchard, 1976). The explanation for how this operates is not entirely clear and consideration of cognitive vs. non-cognitive questions will not be discussed in this paper. But, extending Dunnette's work, the following predictions are made. First, there will be a significant predictive relationship between measures of job-related ability and measures of job performance. Second, there will be greater effort and greater performance in situations where rewards are contingent on performance rather than non-contingent. And third, because of the facilitating effects of contingent rewards on the expression of ability, ability will be a more valid predictor of performance in reward-contingent situations than in reward non-contingent situations. Contingent rewards provide a situational reason for a person to display whatever ability he or she possesses. When rewards are not contingent

on performance, there is one less reason for a person with high ability to display his or her potential. Consequently, even though ability and knowledge of reward contingencies may simultaneously affect performance, which represents one demonstration of a person-situation interaction, Dunnette predicts a greater performance difference between high and low ability people in contingent reward settings than in non-contingent reward settings, which represents the non-additive demonstration of an interaction. The shape of this relationship in terms of mean levels of performance is depicted in plot A of Figure 1.

Insert Figure 1 about here

Korman's theory of work motivation (Korman, 1970) states that people will be motivated to behave and perform in a manner that is consistent with their self-concept. Self-esteem has been used as the primary measure of this individual difference characteristic. Building on Korman (1970) and Dunnette (Note 2), the following predictions are made. First, ability again will predict performance. Second, self-esteem will be positively related to both effort and performance. And third, self-esteem will function as an individual difference factor that will facilitate the expression of ability. Therefore, ability will be a more valid predictor of performance for individuals with high self-esteem as opposed to low self-esteem. People with low self-esteem should not be motivated to do well and as a result, ability differences will not be relfected in perfor - mance differences. But, because people with high self-esteem should be motivated to do well, ability differences will be reflected in performance differences. Self-esteem is predicted to operate in a manner similar to differences in contingent vs. non-contingent reward systems in that both have the potential to facilitate the expression of ability. The shape of the relationship between ability

and self-esteem on mean levels of performance is depicted in plot B of Figure 1. It should be noted that although these predictions do not involve a person-situation interaction, the general position of the interactionist viewpoint was used to develop the hypotheses.

It also is possible to extend the interactionist view to the effects of self-esteem and contingent reward systems on effort and performance. Based on the work of Korman (1970) and Hechler and Wiener (1974), we would predict greater effort and performance for people with high self-esteem as opposed to low self-esteem and greater effort and performance for people working under contingent reward systems as opposed to non-contingent reward systems. This would reflect a person-situation interaction in the sense that both variables influence behavior simultaneously. But, we also predict that self-esteem will be a more valid predictor of effort and performance when rewards are <u>not</u> contingent on performance than when rewards are contingent on performance. In a non-contingent reward situation, there may be no situational reason for a person with low self-esteem to perform well, whereas there is a personality reason for people with high self-esteem to perform well. Consequently, in this situation, self-esteem should be a valid predictor of performance. When rewards are contingent on performance, however, there is a situational reason to perform well. Although this should provide additional motivation to high self-esteem people, they already may be functioning at high levels. The major impact, then, of contingent reward systems may be on the motivation of low self-esteem people to exert greater effort and attain higher levels of performance than they otherwise might attempt. The shape of this non-additive relationship between self-esteem and reward contingencies in terms of mean levels of performance is depicted in plot C of Figure 1.

In summary, the present study was designed to examine the prediction of

work behavior and performance from an interactionist viewpoint. Specifically, two forms of interactions were examined. One deals with the simultaneous effects of people and situations and the other deals with the non-additivity of person-situation effects. By systematically considering ability, self-esteem, and reward contingencies, it was possible to propose hypotheses that otherwise might not have been considered. In addition, the interactionist view was extended to the joint effects of two individual difference variables; namely ability and self-esteem.

METHOD

Overview

The satisfaction of certain conditions is crucial for adequate tests of the hypotheses that were derived from the interactionist perspective. There must be sufficient variability in measures of individual differences and of situational characteristics. Measures should be valid, reliable, and job related. And, the existence of other possible causal factors should be experimentally or statistically controlled, or examined as additional factors in the design and analysis.

A week long experimental simulation was chosen as the appropriate method for testing the hypotheses. This would allow for strong experimental control over the situation, people could be assessed prior to participation so as to assure variability in ability and self-esteem, and reliable and valid measures of behavior and performance could be recorded. Basically, it was felt that an experimental simulation would be conducive to the creation of conditions that would have high power to test the validity of the hypotheses.

Subjects

Sixty male and female subjects, 17 to 19 years of age, were hired from newspaper advertisements to work five hours a day for one week in a simulated organization. The simulation was conducted during three successive weeks in

different towns with 20 subjects at each site. There were no mean differences in ability or self-esteem as a function of subject sex or site location. The sample size was reduced to 55 subjects because five people at one location failed to complete the assigned material.

Task and Procedure

The job consisted of working on programmed texts (PT's) designed to teach introductory principles of electricity. Subjects sutdied a PT and had to pass a short quiz to advance to the next PT. Upon completion of the first six PT's, subjects were given a 55 item comprehensive examination covering all the material. Subjects worked individually and at their own pace.

Assessment of Independent Variables

Ability was assessed at the time people applied for the job. Based on a task analysis, five standardized tests were selected for use. Scores on the tests were highly related so a composite ability score was computed by taking the sum of the T-scores of each of the five tests. The mean of this composite was 255.63, the standard deviation was 37.70, and the range was from 173 to 316 (N=55).

Self-esteem also was assessed prior to presentation of the work material. The 34 item Self-acceptance scale from the California Psychological Inventory (Gough, 1957) was used. This measure has been employed in studies of Korman's theory of work motivation (cf., Hechler & Wiener, 1974). The mean response was 21.89, the standard deviation was 4.23, and the range was from 12 to 28 (N=55).

Reward systems were either contingent or non-contingent on advancing to the next PT. At one site, people were paid $2.00 per hour regardless of how rapidly they progressed through the material. At the two other sites, pay was contingent on how rapidly they went through the material. The amount of pay was fixed so that the expected hourly pay value in the contingent condition, assuming average effort, was $2.00 per hour. In other words, if people in the contingent

condition worked as hard as the average person in the non-contingent condition, they all would earn an average of $2.00 per hour. Checks indicated that these manipulations were effective in so far as self-reports concerning the connection between performance and pay varied significantly in the proper direction between the two groups.

Assessment of Dependent Variables

Effort was assessed by examining the percentage of time each person worked at the task material. Time-lapse movies were made of the entire week and these were coded by counting the number of frames a person maintained visual contact with the written task material. The mean percent of time working was 79.7, the standard deviation was 11.7, and scores ranged from 48 to 96. This procedure is discussed in Terborg (1977) and Pritchard, Hollenback, and DeLeo (in press).

Quality performance was computed as the percentage of items correct on the comprehensive examination that covered the first six PT's. The mean percent correct was 81.9, the standard deviation was 13.0, and scores ranged from 49 to 99.

Quantity performance was operationalized by recording the total number of minutes required to complete the first six PT's. Superior performance on this measure would be reflected by a low score on this variable. The mean time in minutes was 413.26, the standard deviation was 126.74, and scores ranged from 213 to 851.

RESULTS

Three sets of analyses were conducted in order to test the hypotheses. Overall predictive relationships were investigated by computing intercorrelations among all variables. Differential prediction as a function of level of self-esteem and type of reward system was investigated by doing differential validity analysis. Finally, the identification of main effects and cross product effects was investigated with moderated regression analysis.

Correlation Analyses

Intercorrelations among all variables are presented in Table 1. Ability

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Insert Table 1 about here

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was significantly correlated with self-esteem, effort, and both quantity and quality performance. Self-esteem was significantly correlated with both performance measures but not with effort. Type of reward system was significantly correlated with effort and quantity performance, but not with quality performance.

Of interest is the finding that effort correlated with ability but not with self-esteem. Also, the high correlation between ability and self-esteem suggests the need to use partial correlation techniques when considering differential validity predictions.

Differential Validity Analyses

Building on Dunnette's work, it was predicted that ability would be a more valid predictor of performance when rewards were contingent on performance rather than non-contingent. Examination of Table 2 shows that this was not the case.

Insert Table 2 about here

There were no significant differences in correlations between ability and the criteria of effort, quantity performance or quality performance as a function of type of reward system. The table also shows that partialing out self-esteem had little impact on the validities.

The combined work of Dunnette (Note 2) and Korman (1970) predicted that

ability would be a more valid predictor of performance for people with high self-esteem rather than low self-esteem. To examine this, two groups were formed by taking 20 subjects with the highest self-esteem scores and 20 subjects with the lowest self-esteem scores. Although Table 2 shows that ability was significantly correlated with effort for high self-esteem subjects but not for low self-esteem subjects, the zero-order correlations and the partial correlations were not significantly different from each other. There was no evidence of differential validity as a function of self-esteem using either zero-order correlations or partial correlations.

Finally, stemming from the work of Korman (1970) and Hechler and Wiener (1974), it was hypothesized that self-esteem would be a more valid predictor of performance for subjects in a non-contingent reward situation as compared to a contingent reward situation. Table 2, however, shows no evidence of differential validity for either zero-order correlations or partial correlations. Of interest, self-esteem was significantly correlated with quantity performance in the contingent reward situation, and self-esteem was significantly correlated with quality performance in the non-contingent reward situation. There was, however, no evidence of significant differences between any of the correlations.

Moderated Regression Analyses

Tests for the significance of overall main effects and of cross products were conducted with multiple regression following procedures outlined by Cohen (1978). The results are presented in Tables 3, 4, and 5. The results in Table 3

Insert Tables 3, 4, and 5 about here

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show that ability and pay condition significantly predicted all three dependent variables and that in no instance were the cross product terms significant once

ability and pay were entered into the equation. These results were essentially the same regardless if self-esteem was controlled statistically by entering it first in the regression equation. The results in Table 4 show that ability and self-esteem significantly predicted all three dependent variables and that again there was no evidence of an independent contribution by the cross product terms. The results were unaffected by controlling for pay condition. Finally, Table 5 shows that self-esteem and pay predicted effort and quantity performance but not quality performance, and that these two predictors also were significant with effort and quantity when ability was controlled statistically. Self-esteem and pay did not predict quality performance in either regression equation and there was no evidence of an independent contribution by the cross product terms for any of the criteria.

Blood and Mullet (Note 3) stated that moderated regression with cross products is unlikely to show significant interactions even when they are known to be present. As a check on the possibility that this may have occurred with these data, the data were plotted by taking the top and bottom thirds of ability and self-esteem and by using knowledge of pay condition. The plots of group means did <u>not</u> visually show support for the predicted shapes in Figure 1.

DISCUSSION

The results from this study provide strong support for the predictions that ability, self-esteem, and reward contingencies will influence effort and performance. There was no evidence, however, of differential validities or of significant increases in prediction when cross-products were entered into regression equations. The lack of differential prediction in the present study is inconsistent with research reviewed by Schneider (1978) and the empirical work of Locke et al. (1978), but it is not an atypical finding (see Terborg, 1977).

The results have implications for the widely offered assertion that Performance = Ability x Motivation. Self-esteem and reward contingencies represent personal and situational variables that are thought to effect motivation. The model that best describes the obtained results would be Performance = Ability + Motivation. The lack of differential effects as a function of high or low motivation is not likely due to a restriction in variance. Recall that subjects had considerable range in ability and self-esteem and that the situation was manipulated effectively. Also, because of the nature of the design, a controlled one-week long simulation, the measurement of effort and performance was superior to that usually achieved in field investigations. It is possible that a ceiling effect on performance limited the degree to which high ability people could have improved their performance. But, this ceiling effect would not have limited the performance of low self-esteem people in the contingent reward condition.

The significant correlation between ability and self-esteem merits discussion. People may develop high self-esteem from previous task success and task success may be due to ability differences. The proposed direction is: Ability → Performance → Self-esteem. If this is correct, relationships between performance and self-esteem should be reduced when ability is partialled from both, but relationships between ability and performance should be unaffected by the partialling out of self-esteem. Additional analyses supported this interpretation. The correlations between self-esteem and performance were reduced to non-significance when ability was partialled out, but partialling out self-esteem had virtually no effect on the correlations between ability and performance. This suggests that at a minimum, future tests of Korman's theory must control for ability. It also implies that because we are better able to measure ability than we are able to measure self-esteem, we might do better by focusing our efforts on the identification of task relevant abilities.

This does not mean, however, that Korman's emphasis on self-esteem is misplaced. Rather, it suggests limitations to Korman's theory. Specifically, if we are interested in predicting performance at one point in time, the measurement of self-esteem may be redundant with the measurement of ability. But, the value of self-esteem becomes evident when we attempt to predict changes in performance over time, or reactions to task success and failure. Given task failure, a person with high self-esteem is predicted, in the short run, to approach the task again and to engage in behavior required for task success. We expect greater effort and better performance on the second attempt. Knowledge of only a person's ability does not lead to predictions of changes in effort or performance because ability is relatively stable and it would not be expected to change with one performance attempt.

The results have implications for the interactionist view that was discussed earlier. In a sense, it is difficult to refute the interactionist position because the finding of an algebraic interaction term is only one of several interpretations of an interaction. Also, failure to find person effects or situation effects only suggests that the variables, as assessed, were not relevant and that unidentified causal variables remain to be uncovered. The value of the interactionists, however, lies in their strategy. They start with a criterion of interest and work backwards in an attempt to isolate personal and situational factors that are relevant. We do this in the validation of tests for industry when a job analysis preceeds and guides the selection of an experimental test battery. But, not enough attention is directed toward situational factors that effect performance or that effect the display of ability. The need for a taxonomy of situations has been stated before (Schneider, 1978), but little systematic work has been done. An exception in the industrial-organizational literature is the recent work by Peters and his associates (Peters & O'Connor,

in press; Peters, O'Connor, & Rudolf, in press), and more work is needed if we take the interactionist view seriously.

Another advantage to the interactionist view is that we must consider the simultaneous effects of personal and situational variables. This may lead to non-obvious predictions. The prediction of improvement in performance for low self-esteem people in contingent reward as opposed to non-contingent reward situations as tested in the present study is one example. A second example pertains to the effects of situational constraints to performance. Generally, we would think that constraints to performance should be removed. But, Atkinson's research on need for achievement (Atkinson, 1964) states that for people high on this need, the tendency to act will be greatest when the probability of success is near 50%. This means that on tasks where the overall base rate of success is high, people with high n-Ach are less motivated to do well than if the base rate were lower. Therefore, the motivation of these people may be enhanced when constraints are introduced. Also, it is possible that for these people their absolute level of performance may actually be higher when constraints are present rather than absent. A third example deals with the notions of changing task models and changing person models. Alvares and Hulin (1972) proposed that one explanation for observed temporal changes in ability-performance relationships is that with practice or experience the importance of certain abilities for success changes. A second explanation is that while the task stays the same, a person's abilities change. This means that the postdiction of performance from ability as measured after training may be different from the prediction of performance from abi y as measured before training. A study by Dunham (1974) showed that some combination of the changing task and changing person models may be needed. The interactionist view suggests the need to consider temporal changes in both people and situations. Situations that facilitate initial

performance may constrain later performance and vice-versa.

Another issue that becomes relevant when taking an interactionist view is differential concern for predictive validities and mean levels of performance. Weinstein and Holzbach (1973) noted that in selection research emphasis is placed on the maximization of the validity coefficient in a particular situation. The thought that a different situation might raise overall performance is virtually ignored. Yet, it is possible that a change in the situation, while lowering the ability-performance correlation, could actually increase the group mean on performance. Graphically speaking, with ability on the abscissa and performance on the ordinate, a circle would be directly above an ellipse. The mean level of ability remains the same, but the ability-performance correlation and the mean level of performance are different.

Finally, it may be necessary to expand notions of the situation to include socially constructed environments in addition to more objective indices of known environmental characteristics. Salancik and Pfeffer (1978) suggested that social factors may influence ratings of job characteristics and recent research supports this view (O'Reilly and Caldwell, 1979; White and Mitchell, 1979). Consideration of how perceptions of environments are shaped by personal and social factors would lead to research on other types of interactions discussed by Olweus (1977) that were not addressed in this paper.

In conclusion, the present study demonstrated that both characteristics of people and characteristics of the situation were important. Knowledge of ability, self-esteem, and reward contingencies accounted for 30% of the variance in effort, 41% of the variance in quantity performance, and 66% of the variance in quality performance. Although ability was the best single predictor, self-esteem and reward contingencies had independent effects in improving the prediction of two of the three criteria. The lack of finding differential validities

or significant cross product terms was not judged to be inconsistent with an interactionist view because an algebraic interaction is only one interpretation of an interaction. It was suggested that future research in the areas of motivation and performance would benefit from simultaneous consideration of personal and situational characteristics that are thought to impact on criteria of interest.

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Footnote

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Table 1

Correlation Matrix for Predictors and Criteria (N=55)

	Ability	Self-Esteem	Pay	Effort	Quantity
Self-Esteem	.48**				
Pay[1]	-.14	-.07			
Effort	.37**	.12	.33*		
Quantity[2]	-.44**	-.38**	-.36**	-.44**	
Quality	.81**	.30*	-.13	.39**	-.22

[1]Non-contingent pay was coded 1; Contingent pay was coded 2

[2]A low score on this variable indicates superior performance

*$p < .05$

**$p < .01$

Table 2

Differential Validities by Method of Pay and Self-Esteem[1]

	Non-Contingent Rewards		Contingent Rewards	
Ability with:	Zero-Order	Partial	Zero-Order	Partial
Effort	.55*	.47*	.41*	.41*
Quantity	-.55*	-.49*	-.55*	-.41*
Quality	.87*	.82*	.81*	.81*
Self-Esteem with:				
Effort	.28	.03	.11	-.11
Quantity	-.34	-.11	-.51*	-.34*
Quality	.54*	.29	.25	-.26
	Low Self-Esteem		High Self-Esteem	
Ability with:	Zero-Order	Partial	Zero-Order	Partial
Effort	.18	.21	.58*	.69*
Quantity	-.36	-.38	-.34	-.51*
Quality	.86*	.86*	.81*	.81*

[1]Sample sizes were: Non-Contingent = 15; Contingent = 40; Low Self-Esteem = 20; High Self-Esteem = 20.

*$p < .05$

Table 3

Regression Results using Ability and Pay as Predictors: With and Without Controlling for Self-Esteem[1,2]

Criterion	Variable entered in Step 1	R^2 change	Variable entered in Step 2	R^2 change	Variable entered in Step 3	R^2 change
Effort	Self-Esteem (Non-signficant)	.02	Ability + Pay ($F_{2,51}=9.88; p<.01$)	.28	Ability x Pay (Non-significant)	.00
	Ability + Pay ($F_{2,52}=10.48; p<.01$)	.29	Ability x Pay (Non-significant)	.00		
Quantity	Self-Esteem ($F_{1,53}=8.74; p<.01$)	.14	Ability + Pay ($F_{2,51}=11.63; p<.01$)	.27	Ability x Pay (Non-significant)	.02
	Ability + Pay ($F_{2,52}=15.55; p<.01$)	.37	Ability x Pay (Non-significant)	.02		
Quality	Self-Esteem ($F_{1,53}=5.25; p<.05$)	.09	Ability + Pay ($F_{2,51}=42.75; p<.01$)	.57	Ability x Pay (Non-significant)	.02
	Ability + Pay ($F_{2,52}=48.66; p<.01$)	.65	Ability x Pay (Non-significant)	.02		

[1] N=55

[2] R^2 and F values are based on the increase in prediction for each step by order of entry

Table 4

Regression Results Using Ability and Self-Esteem as Predictors: With and Without Controlling for Pay[1,2]

Criterion	Variable entered in Step 1	R^2 change	Variable entered in Step 2	R^2 change	Variable entered in Step 3	R^2 change
Effort	Pay ($F_{1,53}=6.55; p < .05$)	.11	Ability + Self-Esteem ($F_{2,51}=6.47; p < .05$)	.18	Ability x Self-Esteem (Non-significant)	.05
	Ability + Self-Esteem ($F_{2,52}=4.24; p < .05$)	.14	Ability x Self-Esteem (Non-significant)	.04		
Quantity	Pay ($F_{1,53}=7.99; p < .01$)	.13	Ability + Self-Esteem ($F_{2,51}=12.10; p < .01$)	.28	Ability x Self-Esteem (Non-significant)	.00
	Ability + Self-Esteem ($F_{2,52}=7.66; p < .01$)	.23	Ability x Self-Esteem (Non-significant)	.00		
Quality	Pay (Non-significant)	.02	Ability + Self-Esteem ($F_{2,51}=48.00; p < .01$)	.64	Ability x Self-Esteem (Non-significant)	.00
	Ability + Self-Esteem ($F_{2,52}=50.58; p < .01$)	.66	Ability x Self-Esteem (Non-significant)	.00		

[1] $N=55$

[2] R^2 and F values are based on the increase in prediction for each step by order of entry

Table 5

Regression Results Using Self-Esteem and Pay as Predictors: With and Without Controlling for Ability[1,2]

Criterion	Variable entered in Step 1	R^2 change	Variable entered in Step 2	R^2 change	Variable entered in Step 3	R^2 change
Effort	Ability ($F_{1,53}=8.39;p<.01$)	.14	Self-Esteem + Pay ($F_{2,51}=5.54;p<.05$)	.15	Self-Esteem x Pay (Non-significant)	.01
	Self-Esteem + Pay ($F_{,52}=3.92;p<.05$)	.13	Self-Esteem x Pay (Non-significant)	.00		
Quantity	Ability ($F_{1,53}=12.49;p<.01$)	.19	Self-Esteem + pay ($F_{2,51}=9.52;p<.01$)	.22	Self-Esteem x Pay (Non-significant)	.00
	Self-Esteem + Pay ($F_{2,52}=10.96;p<.01$)	.29	Self-Esteem x Pay (Non-significant)	.00		
Quality	Ability ($F_{1,53}=99.10;p<.01$)	.65	Self-Esteem + Pay (Non-significant)	.01	Self-Esteem x Pay (Non-significant)	.00
	Self-Esteem + Pay (Non-significant)	.10	Self-Esteem x Pay (Non-significant)	.00		

[1] $N=55$

[2] R^2 and F values are based on the increase in prediction for each step by order of entry

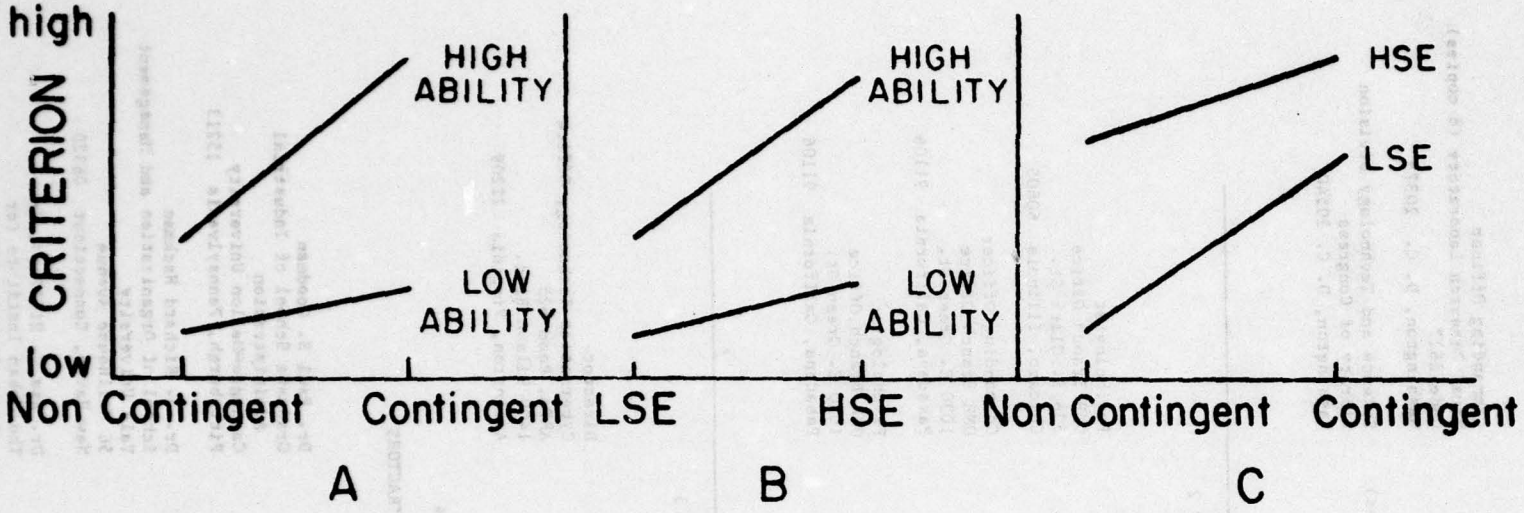

Figure 1. Predicted Mean Differences in Performance

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